

Preliminary Amendment

Applicant: Josef Böck et al.

Serial No.: Unknown

(Priority Application No. DE 102 31 407.1)

(International Application No. PCT/EP2003/007553)

Filed: Herewith

(Priority Date July 11, 2002)

(International Filing Date July 11, 2003)

Docket No. I435.121.101/12307

Title: BIPOLAR TRANSISTOR

IN THE CLAIMS

Please cancel claims 1-8 without prejudice.

Please add new claims 9-32 as follows:

9. (New) A bipolar transistor comprising:
an emitter area which can be contacted electrically via an emitter electrode;
a base area which can be contacted electrically via a base electrode;
a collector area which can be contacted electrically via a collector electrode; and
wherein at least one electrode of the emitter electrode, base electrode and collector electrode is a polysilicon layer, into which impurity atoms, which cause a high density of vacancies in the polysilicon layer, are inserted.
10. (New) The transistor of claim 9, comprising wherein the impurity atoms are C, P or Ar atoms.
11. (New) The transistor of claim 9, comprising wherein the density of the impurity atoms in the polysilicon layer is in the range of about 10^{19} to 10^{21} cm^{-3} .
12. (New) The transistor of claim 9, comprising wherein the polysilicon layer is doped with boron atoms.
13. (New) The transistor of claim 12, comprising wherein the concentration of the boron atoms is greater than $5 \times 10^{20} \text{ cm}^{-3}$.
14. (New) The transistor of claim 9, comprising wherein the at least one electrode consists of polycrystalline silicon-germanium.

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15. (New) The transistor of claim 9, comprising wherein the at least one electrode is the base electrode.
16. (New) The transistor of claim 9, comprising wherein the bipolar transistor is a self-aligned bipolar transistor.
17. (New) A bipolar transistor comprising:
an emitter area;
a base area;
a collector area; and
a base electrode comprising a polysilicon layer, into which impurity atoms, which cause a high density of vacancies in the polysilicon layer, are inserted.
18. (New) The transistor of claim 17, comprising wherein the impurity atoms are C, P or Ar atoms.
19. (New) The transistor of claim 17, comprising wherein the density of the impurity atoms in the polysilicon layer is in the range of about 10^{19} to 10^{21} cm⁻³.
20. (New) The transistor of claim 17, comprising wherein the polysilicon layer is doped with boron atoms.
21. (New) The transistor of claim 20, comprising wherein the concentration of the boron atoms is greater than 5×10^{20} cm⁻³.
22. (New) The transistor of claim 17, comprising wherein the at least one electrode consists of polycrystalline silicon-germanium.

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23. (New) The transistor of claim 17, comprising wherein the bipolar transistor is a self-aligned bipolar transistor.
24. (New) A bipolar transistor comprising:
an emitter area which can be contacted electrically via an emitter electrode;
a base area which can be contacted electrically via a base electrode;
a collector area which can be contacted electrically via a collector electrode; and
wherein at least one electrode of the emitter electrode, base electrode and collector electrode is a polysilicon layer, into which impurity atoms, which cause a high density of vacancies in the polysilicon layer, are inserted, wherein the impurity atoms are C, P or Ar atoms, and wherein the density of the impurity atoms in the polysilicon layer is in the range of about 10^{19} to 10^{21} cm⁻³.
25. (New) The transistor of claim 24, comprising wherein the polysilicon layer is doped with boron atoms.
26. (New) The transistor of claim 25, comprising wherein the concentration of the boron atoms is greater than 5×10^{20} cm⁻³.
27. (New) The transistor of claim 26, comprising wherein the at least one electrode consists of polycrystalline silicon-germanium.
28. (New) The transistor of claim 27, comprising wherein the at least one electrode is the base electrode.
29. (New) The transistor of claim 28, comprising wherein the bipolar transistor is a self-aligned bipolar transistor.

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30. (New) A bipolar transistor comprising:
- an emitter area;
 - a base area;
 - a collector area; and
- electrode means comprising a polysilicon layer, into which impurity atoms, which cause a high density of vacancies in the polysilicon layer, are inserted.
31. (New) The transistor of claim 30, comprising wherein the impurity atoms are C, P or Ar atoms.
32. (New) The transistor of claim 34, comprising wherein the density of the impurity atoms in the polysilicon layer is in the range of about 10^{19} to 10^{21} cm⁻³.